EXHIBIT U

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

ALIGN TECHNOLOGY, INC., Plaintiff and Counterclaim Defendant, v. 3SHAPE TRIOS A/S and 3SHAPE A/S, Defendants and Counterclaimants.	Civil Action No. 6:20-cv-00979-ADA

3SHAPE'S OPENING BRIEF ON CLAIM CONSTRUCTION

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2. [G.2] "accounting for changes in surface topology when [intraorally] scanning a patient's teeth for a dental procedure" ('609 Patent, Cls. 1, 12, 23)

The Court should adopt 3Shape's construction because the preambles of claims 1, 12, and 23 are limiting. Preambles of claim terms are generally not considered to be limiting. *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1347 (Fed. Cir. 2012). However, "[c]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808–09 (Fed. Cir. 2002). As discussed, the applicant for the '936 patent relied on the changes in surface topology recited in the preamble to distinguish the claimed invention from the prior art. (*See* § II.B.1., *supra*.) The examiner granted the '609 patent for similar reasons as the '936 patent. (*Compare* Exs. 32, 33.) That is, the examiner granted the '609 patent (and the '936 patent) because the closest prior art "does not provide for (or suggest) generating a composite scan after *intra-oral modifications* are made." (Ex. 33 at 2.) Accordingly, this claim term is limiting.

The specification further confirms a dental practitioner accounts for changes in surface topology. For example, the '609 patent teaches "a material removal operation wherein to modify the topology of said at least a part of said surface of interest." ('609 patent, 6:4–24.) A material removal operation done on a tooth changes its surface topology. For the reasons discussed above, a dental practitioner creates these changes in surface topology. (*See* § II.B.1, *supra*.)

C. [Issue H] The Meaning of Replacing or Updating a Virtual Model

1. [H.1] "replace [replacing] at least a portion of the [removed] surface portion of the model […] using the received second

scan data [at least a portion of the second scan data]" ('936 Patent, Cls. 1, 9, 17) [8]

The '936 patent specification does not disclose what steps or techniques, if any, are involved in "replac[ing]" beyond disclosing that the second scan data is registered to the model. For example, FIG. 1 only discloses "registering …" as the step following the acquisition of the second 3D virtual model. ('936 patent, FIG 1.) As such, where the delete/remove step is separated from the replace step, the replace step should be interpreted to mean registering. Furthermore, even where the specification repeats the claim language of "replacing," that replacing disclosure describes that the replacing is accomplished by registering, and does not describe any further elements or aspects of "replacing." (*See, e.g.* '936 patent, 4:44–50, 22:61–66, 7:50–8:3, 27:35–39, 26:29–34, 11:18–24.) Accordingly, to avoid inappropriately expanding the claim scope beyond what is actually disclosed in the patent, and thus rendering the claim invalid, the replacing terms should be construed as 3Shape has proposed, *i.e.*, coextensive with the patent's disclosure. *See Eastman Kodak Co. v. Goodyear Tire & Rubber Co.*, 114 F.3d 1547, 1556 (Fed. Cir. 1997) (claim terms should be construed to preserve validity).

In addition, 3Shape's proposed construction is appropriate because a POSITA would have understood that registration of the second scan data with the retained portion is necessary to replacing the former into the latter. (Ex. 36 at ¶¶ 21–23.) This is because the second scan data must be placed into the same coordinate system as the retained portion, and to do that a

[8] Other terms related to this issue include: "register [registering] the second scan data with the model" ('936 patent, cls. 4, 17); "register the second scan data with the model by aligning identifying data of the second scan data with corresponding parts of the model" (*id.*, cl. 5, 17; '609 patent, cls. 17, 21, 23). 3Shape expects that the Court's decision regarding this exemplary term will moot outstanding disputes concerning terms related to this issue, such that these terms do not need to be briefed separately.

correspondence must be determined between the native coordinate system of the second scan and the desired end coordinate system common to both data sets. (*Id.*)

Align's improper construction attempts to capture claim scope that the patent neither discloses nor enables. The specification never suggests that "replacing" means "use instead of." In fact, the word "instead" only appears twice in the specification; it is not used to describe or define the claimed "replacing" in either instance. ('936 patent, 23:18, 27:53.) As such, because claim construction must be based on a term's use in the context of the specification, the Court should reject Align's proposed construction. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313–14 (Fed. Cir. 2005).

2. [H.2] "updating [update] the first model by modifying only at least a portion of the surface data [first surface portion]" ('609 Patent. Cls. 1, 12, 23)

This claim term fails to "inform those skilled in the art about the scope of the invention with reasonable certainty" and is indefinite. *Nautilus*, 572 U.S. at 910. The '609 patent provides no indication as to the scope of the claim language "only at least a portion." For example, the independent claims of the '609 patent merely mention "modifying only at least a portion of the surface data," but do not provide any further limitations to shed light on what constitutes "only at least a portion of the surface data." ('609 patent, cl. 1.) This failure creates a problem for a POSITA attempting to understand this limitation because the inclusive language "at least" appears to directly contradict the exclusive word "only." The conjunction of these two contradictory terms prevents a POSITA from ascertaining the scope of the invention. (Ex. 36 at ¶ 25.) The specification likewise fails to provide guidance. In fact, it does not mention "only at least a portion" anywhere. Thus, this claim is indefinite.

Finally, the Court should adopt 3Shape's broader construction because Align violates the doctrine of claim differentiation by proposing a construction that renders claims 6–8 and 17–19 meaningless. An interpretation of a claim that would render another claim in the patent "superfluous" is "presumptively unreasonable." *Beachcombers, Int'l, Inc. v. WildeWood Creative Prods., Inc.*, 31 F.3d 1154 (Fed. Cir. 1994). Here, dependent claims 8 and 19 each recite that "the second 3D data is generated based on the 3D virtual model." ('527 patent, cls. 8, 19.) Accordingly, 3Shape's proposed construction of the independent claim terms (which allows for scanning to generate the second 3D data) properly affords these dependent claims a narrower scope. Align's proposed construction, however, renders these claims superfluous. In particular, the interpolating between 3D points in a model or extrapolating the 3D virtual model described in Align's proposed construction are both data-generating techniques "based on the 3D virtual model" as recited in claims 8 and 19. Additionally, Align's verbatim copying of dependent claims 6–7 and 17–18 into its proposed construction rendering these dependent claims superfluous. This is improper. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004) ("[W]here the limitation that is sought to be 'read into' an independent claim already appears in a dependent claim; the doctrine of claim differentiation is at its strongest.").

Accordingly, the Court should adopt 3Shape's proposed construction.

IV. CONCLUSION

For the foregoing reasons, 3Shape respectfully requests the Court adopt 3Shape's proposed constructions.

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Respectfully submitted,

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